

July 17, 2023

To the Members of the Arlington Affordable Housing Trust Fund Board:

I am so pleased to be making this request for \$260,000 to support the installation of a modular Accessory Dwelling Unit (ADU) built by Somerville-based Reframe Systems at the rear of HCA's property at 40-42 Dorothy Road.

This project – while only representing a single affordable home – has the potential to inspire and facilitate more affordable housing that is net zero, solar powered, and able to be constructed faster and less expensively than traditional construction methods.

HCA and the Town have an opportunity to place this unit now, during Reframe System's pilot phase, at a reduced cost from what these units will likely cost in the future. Not only will HCA add a new, highly energy efficient, affordable apartment to our portfolio, but we will gain experience with a new housing product that may be suitable to employ for future multi-family affordable housing developments in Arlington.

This project is time sensitive. To benefit from the lower cost unit at this time, we must align with Reframe System's deadlines, imposed on them by their equity investor.

Funds from the Affordable Housing Trust Fund would enable HCA to move forward with this project and not only provide a highly efficient new home for a family, but consider if we might be able to build more for less with this product in the future.

Thank you in advance for your deep and swift consideration of this request.

Sincerely,



Erica Schwarz
Executive Director

1. **Goals:** What are the goals of the proposed project?

The Housing Corporation of Arlington (HCA) was approached by Reframe Systems, a building corporation whose mission entails building quality, net zero, carbon-free, Massachusetts built, modular homes at scale. HCA seeks to partner with Reframe Systems as they implement a pilot program, including building an Accessory Dwelling Unit (ADU) behind one of HCA's existing buildings. This project will introduce a new model for the provision of affordable, sustainable units that are well designed and built to address the critical need for affordable housing that can be developed on a large scale but at a lower cost than traditional construction.

HCA chose this site via a process of analyzing HCA's existing properties for sites of a size and location that could well accommodate building an ADU, while not eliminating amenities current tenants on the site are enjoying. The property has two existing Development Units within a 2-family home facing Dorothy Road. The two-story ADU for this site will be an approximately 900 square foot, all-electric Passive House building that is solar ready. The ADU will be placed in the approximate location of the existing aging 2-car garage which is not used by current tenants and will be demolished.

Reframe is working towards the ideal unit configuration of 2 bedrooms + office and 2 bathrooms with the ground floor being ADA compliant. Their goal is to optimize the experience for the occupants, the customer (HCA), the maintenance team, the construction team and the neighbors. Reframe anticipates having a relatively quiet construction site and are planning an aggressive schedule of going from foundation complete to building complete in under 30 days. The structure will consist of two modules that are approximately 14'Wx35'Lx10'H which will be manufactured in Andover, MA and transported over the day of setting.

In addition to having a Passive House envelope, the building will maximize the use of heat pumps and net-zero carbon materials such as dimensional lumber for the framing, Wood Fiber insulation, MgO boards in lieu of Gypsum and either helical piles or shallow depth foundations to minimize the use of concrete. The ADU will also maximize the use of low-voltage wiring which minimizes energy switching losses, is inherently safer and reduces the amount of copper wiring. Pending solar and energy analysis, Reframe intends to outfit the ADU with Solar Panels and a backup battery which can also be used to power the primary building.

The unit will meet all existing requirements including:

- State building codes
- Arlington Building Code

HCA and Reframe Systems entered into a Memorandum of Understanding (MOU) which details that Reframe Systems would design the project and hire a General Contractor to execute the design which would include obtaining all zoning approvals and building permits, identifying any potential hazardous materials and completing the garage demolition and installation of the ADU unit. Reframe would be responsible for obtaining insurance during construction that meets the requirements of HCA as well as the existing requirements from the Mortgage holder.

HCA must secure all financing to cover the full project cost, estimated at approximately \$366,000. Approximately \$320,000 of this total is the construction fee to Reframe Systems. HCA is requesting \$260,000 in construction costs for the project from the Town of Arlington Affordable Housing Trust Fund (AHT). Once the financing has been secured by the Housing Corporation, a contract between HCA and Reframe would be executed to spell out the terms from the MOU as well any other additional requirements. HCA has secured pro bono legal representation to support contract negotiations.

2. **Community Need:** Why is the project needed? Does it address needs identified in existing Town plans? If so, please specify.

The Town of Arlington has identified a critical need to add additional affordable housing. As has been detailed in the *Arlington Affordable Housing Trust Five Year Action Plan (2022-2027)*, greater Boston has a serious affordable housing crisis that has created a critical need to provide opportunities to create new units. This crisis is exasperated by the limited availability of land which has driven up costs considerably to make areas like Arlington out of reach for many very low to moderate-income persons and families. The proposed project is in line with the guiding principles spelled out by the Affordable Housing Trust to “create as much additional affordable housing as possible”, “prioritize those with the greatest needs while advancing solutions for a wide range of affordable housing needs”, “leverage resources for maximum impact” to “advance sustainability and climate resiliency while increasing affordability”, “collaborate and innovate with organizations that are housing stakeholders”.

While the Trusts’ decisions perhaps cannot be made based on positive publicity impacts, the Town does also have as a goal to increase the capacity of its local housing providers. The media attention HCA will seek around this new model would enable greater fundraising for HCA and likely further legitimize our organization in the eyes of future housing funders and partners.

This project represents an important opportunity for HCA and the town of Arlington to identify a model for affordable housing development that may be cheaper, faster, and as least as energy efficient than current systems of affordable housing delivery. The success of this pilot effort could provide a new blueprint to delivering more affordable units to Arlington as well as the greater Boston area to relieve some of the strain currently facing the town.

3. **Community Support:** What is the nature and level of support for this project? Include letters of support and any petitions.

The Community Support for this effort lies in increasing the amount of affordability in Arlington by pursuing all feasible options, as HCA has been encouraged to do by Town Administrators and by the members of the Housing Trust. The Housing Corporation has long been noted as a critical stakeholder to help the Town achieve its affordable housing goals in a manner that is smart and sustainable to create a more equitable Arlington. We have also communicated with our existing tenants on the site, who support the mission of creating more affordable housing in Arlington.

4. **Timeline:** What is the schedule for project implementation, including a timeline for all critical milestones?

Property Acquisition:	N/A; HCA already owns this site. We would enter into an agreement to allow Reframe access to develop the project and then turn back over to HCA for the long-term ownership and management of the unit along with the existing 2 units at 40-42 Dorothy Road
Zoning Application and Approval:	Fall 2023
Funding Applications and Approval:	Summer 2023
Construction Start:	12/1/2023
Construction Completion:	3/31/2024
Occupancy:	Expected by 5/1/2024

5. **Credentials:** How will the experience of the applicant contribute to the success of this project?

The Housing Corporation of Arlington was formed in 1986 out of concerns by residents about rising housing prices. Today, HCA owns and manages 150 units of affordable housing throughout Arlington and provides a set of robust social services to our own tenants and the public at large in order to help ensure family stability.

HCA's early affordable housing projects, starting in 2001, were acquisitions and rehabilitations of buildings of between 2 and 6 units, which was financially feasible at that time. In recent years, HCA has focused on larger projects, both to create more affordable homes at a faster rate and because in today's economy, economies of scale are required for sound development and operating budgets. In 2016, HCA completed a major renovation on its first larger acquisition, the 32-unit Capital Square Apartments at 252-260 Massachusetts Ave. In 2020 HCA completed the redevelopment of 20 Westminster Avenue which created 9 units of affordable housing, including for formerly homeless households. In 2022, HCA completed the 48-unit Downing Square Broadway Initiative. This was HCA's first new construction project and involved an array of funding sources. Given HCA's vast experience, and the fact that – in this case – Reframe Systems will be responsible for the construction/installation project itself, HCA is more than equipped to carry out this project. HCA's primary responsibility will be in communicating with existing tenants and abutters during the construction phase to minimize impacts. HCA has a long successful record of building good working relationships and coordinating with abutters and tenants during such efforts.

HCA has a reliable and active board, an experienced Executive Director, and is well served by a real estate development consultant for this project who brings over 25 years of mission driven real estate development experience. Our property management firm, Peabody Properties, is a large organization that will easily be able to add this unit to its contracted services.

Reframe Systems is a technology startup on a mission to build net-zero-carbon homes for all, at massive scale. By leveraging cutting-edge robotics and software-driven flexible manufacturing processes, they aim to drive four times labor productivity improvements by 2025 (0.125 labor-hour/sq. ft. vs 0.5 labor-hour/sq. ft.). With labor costs accounting for 50% of hard costs, the significant productivity improvement enables Reframe to absorb the higher system costs of net-zero construction, maintain an overall lower cost structure and deliver net-zero homes at lower

price points and helps reduce the energy demand and operational carbon in cities and closes the gap on their long-term vision of unlocking climate-friendly human progress.

Reframe Systems is a Delaware C-Corp and was incorporated on August 31, 2022. They are currently headquartered locally at Greentown Labs in Somerville, MA and will be commissioning their first factory at 30 Lowell Junction Rd, Andover, MA to produce volumetric modules for the 40 Dorothy Rd project. Reframe Systems is seed-funded by Eclipse Ventures and Fundamental Ventures and currently has a balance sheet of more than \$4M.

6. **Budget:** What is the total budget for the project and how will funds be sourced and spent? All items of expenditure must be clearly identified. Distinguish between hard and soft costs and contingencies.

Sources	Estimated Amount
Arlington Housing Trust Fund or other local sources	260,000
Loan (refi with MHP or new loan on whole site with local bank)	
HCA Line of Credit/reserve fund	106,650
Total	366,650

Uses	Estimated Amount
Fee to Reframe System (zoning, testing, demo, construction/install)	320,000
Contingency	16,000
Legal (contract support)	2,000
Real Estate Consulting	2,500
Refi closing and other related costs	5,000
Appraisal (required by current Lender, MHP, for ADU sign off)	5,500
Estimated Costs excluding fee:	351,000
HCA Fee/Overhead	15,650
Estimated Total Project Cost	366,650

9. Maintenance: If ongoing maintenance is required for your project, how will it be funded?

Once the proposed ADU at 40-42 Dorothy Road has been funded, constructed, and in operations, maintenance costs will be funded by rental revenue. The addition of the ADU will provide a marginal increase in the overall operating expenses of the property, however the additional rental unit \ would be rent restricted to match the existing affordability restrictions imposed by the Massachusetts Housing Partnership (MHP) who is the Mortgage holder for the existing 2 units. The entire property will be refinanced sometime over the next year and the new proforma that the new financing is based on will incorporate the ADU.

10. Impact on Town Budget: What, if any, potential secondary effects will your proposed project have on the Town's Operating Budget? Are there any capital projects that rely on the successful completion of your project?

The Housing Corporation of Arlington anticipates no adverse effect on the Town's Operating Budget as a result of funding the 40-42 Dorothy Road ADU pilot project. There are no capital projects that rely on the successful completion of the project.

ADDITIONAL INFORMATION

Control of Site: See attached Deed showing HCA Ownership of the property.

Deed Restrictions: As stated previously, the additional ADU will have a deed restriction per the requirements of Chapter 184. Attached is the form of Affordable Housing Restriction that is typically used and required by the MassDocs lenders. This document will be the template used to apply the restriction of affordability in perpetuity. HCA is willing to enter the form and structure of AHR that would meet the requirements of the Town, subject to the approval of the Massachusetts Housing Partnership (MHP)

Acquisitions: Not applicable for this application- HCA currently owns the property at 40-42 Dorothy Road

Feasibility/Permitting/ Environmental: Per the MOU between the Housing Corporation of Arlington and Reframe Systems, Reframe Systems will be responsible for all securing all necessary permitting, addressing any environmental issues related to the site including with the demolition of the existing garage on site and resolving those issue according to all applicable standards and requirements.

Professional Standards:

Reframe Systems was founded by robotics and systems experts from Amazon Robotics (Vikas Enti, Aaron Small and Felipe Polido) with decades of experience in scaling low-cost automation at massive scale globally. The team also comprises of modular construction experts such as Katrina Potter who spent 12 years as a Structural Engineer designing panelized and volumetric modules for multifamily and Ankur Podder who is a building architect with deep experience in net-zero carbon building design.

The project team includes Reframe Systems as the primary contractor with Pill-Maharam and associates serving as the Architect and Engineer of Record. They are collaborating with both VEIC and Pill-Maharam for the Passive House certification. On the construction front, Reframe has contracted with Tierney Development Services for Construction Management services and will work with them to identify a GC and sub-contractors for the demolition and foundation work. Mod-Tech Homes and ProSet are advising Reframe on module craning and installation. Reframe Systems will be engaging Forge (a new type of trade school) for trades help both in the factory and for the button-up of the modules.

**40-42 Dorothy Road Arlington Affordable Housing Trust Application
ATTACHMENTS**

- MOU between the Housing Corporation of Arlington and Reframe Systems
- Assessor's card and map showing location of the project

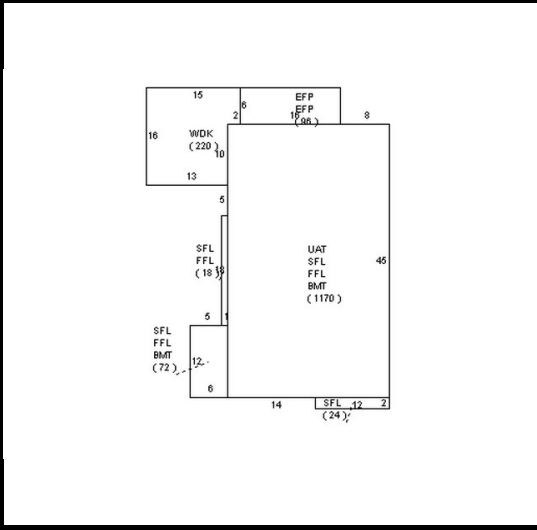


Unofficial Property Record Card - Arlington, MA				
General Property Data				
Parcel ID 013.0-0012-0001.0		Account Number 11016		
Prior Parcel ID 11016 --		Property Location 40 -42 DOROTHY RD		
Property Owner HOUSING CORP OF ARLINGTON		Property Use Housing Corp		
Mailing Address 252 MASS AVE		Most Recent Sale Date 5/7/2004		
City ARLINGTON		Legal Reference 1284-22		
Mailing State MA		Grantor GIBBS ANNA A/TRUSTEE		
Zip 02474		Sale Price 599,000		
ParcelZoning R2		Land Area 0.112 acres		

Current Property Assessment				
Card 1 Value	Building Value 91,600	Xtra Features Value 5,500	Land Value 117,500	Total Value 214,600

Building Description				
Building Style Multi-Garden	Foundation Type Conc. Block	Flooring Type Carpet		
# of Living Units 2	Frame Type Wood	Basement Floor Concrete		
Year Built 1931	Roof Structure Gable	Heating Type Steam		
Building Grade Average	Roof Cover Asphalt Shgl	Heating Fuel Oil		
Building Condition Average	Siding Asbestos	Air Conditioning 0%		
Finished Area (SF) 2544	Interior Walls Plaster	# of Bsmt Garages 0		
Number Rooms 10	# of Bedrooms 4	# of Full Baths 2		
# of 3/4 Baths 0	# of 1/2 Baths 0	# of Other Fixtures 0		

Legal Description				

Narrative Description of Property				
This property contains 0.112 acres of land mainly classified as Housing Corp with a(n) Multi-Garden style building, built about 1931 , having Asbestos exterior and Asphalt Shgl roof cover, with 2 unit(s), 10 room(s), 4 bedroom(s), 2 bath(s), 0 half bath(s).				

Property Images				
				

Disclaimer: This information is believed to be correct but is subject to change and is not warranted.



Reframe
SYSTEMS

May 26th, 2023

Erica Schwarz
Executive Director
Housing Corporation of Arlington
252 Massachusetts Ave,
Arlington, MA 02474

Letter of Intent: Modular Net-Zero Energy ADU at 40 Dorothy Road, Arlington, MA

Dear Erica

Thank you for the opportunity and partnership to build affordable, net-zero accessory dwelling units (ADUs) in Arlington. This letter is to indicate Reframe Systems Inc's intent to partner with the Housing Corporation of Arlington (HCA) to construct a net-zero energy ADU behind 40-42 Dorothy Rd, Arlington, MA between Q4 2023 and Q2 2024 using modular construction technology.

Reframe Systems will work with HCA's requirements to best outfit the floorplan of the ADU as an energy efficient (up to 900 sq ft) two-story structure that meets state building codes and local zoning requirements. The ADU will meet the energy performance requirements of PHIUS Zero and will have roof mounted solar panels with on-site battery backup. Depending on the requirements from HCA, the ADU can be configured to be ADA compliant or age-in-place ready. Reframe Systems will be the primary point of contact for HCA and will own the design and manufacturing of the ADU. Reframe Systems will hire a General Contractor to execute the project including securing all necessary zoning approvals and building permits, demolishing the existing garage (including identifying any existing hazmats and carrying out any related demolition precautions), establishing water/sewer and electrical connections



to the modules, building a new foundation, transporting and installing the modules, button-up and final landscaping. Reframe Systems will carry insurance during the construction period that aligns with HCA's existing insurance requirement for 40-42 Dorothy Road and names HCA as an additional insured. The final provided unit will be move-in ready.

Housing Corporation of Arlington will secure all funds to pay for the project. Reframe Systems estimates the total project fee charged to HCA to be between \$250,000 to \$300,000 and anticipates breaking ground in Q4 2023 and completing the project by Q1 2024 and no later than Q2 2024. We will work closely with your team to align on exact dates and will work diligently to minimize disruption to the current residents at 40-42 Dorothy and neighbors. Reframe Systems will invite HCA to key planning and construction meetings to help ensure appropriate coordination with existing occupants and neighbors.

We understand that the project timeline may be impacted by the timing of the financing awards. HCA's ability to enter into a final contract will be contingent on sign-off from the current lenders of 40-42 Dorothy Ave and on securing financing awards.

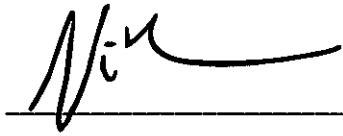
Reframe Systems will provide at least a 1 year limited warranty on all workmanship and additional warranties will be detailed out in Reframe Systems' warranty policy prior to signing a contract. We have hired David Pill from Pill-Maharam as the Architect of Record and VEIC as the energy consultant.

We look forward to making progress on this project and anticipate developing and signing a contract by July 15, 2023, or once HCA has secured financing.

(signature page to follow)



Sincerely,



Date: May 26, 2023

Vikas Enti
Reframe Systems Inc
Co-Founder and CEO

Signed by:



Date: 5-30-23

Erica Schwarz
Housing Corporation of Arlington
Executive Director

